CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER 90-095

NPDES NO. CA0005789

WASTE DISCHARGE REQUIREMENTS FOR:

SHELL OIL COMPANY
MARTINEZ MANUFACTURING COMPLEX
CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. Shell Oil Company, henceforth called the Discharger, submitted an NPDES application (Report of Waste Discharge) dated August 23, 1989, for the reissuance of NPDES Permit No. CA0005789.

2. The discharge of wastewater from the Martinez facilities is currently regulated by Waste Discharge Requirements contained in Order No. 85-22, adopted by the Board on February 20, 1985.

3. The Discharger operates a petroleum refinery with a crude-run throughput of 143,000 barrels per day. It manufactures fuels and lubricants and is classified as a lube refinery as defined by the U.S. Environmental Protection Agency in 40 CFR 419.40. Treated process wastewater, stormwater runoff, and other wastes as described below are discharged into Carquinez Strait, a water of the United States.

4. The report of waste discharge and recent self-monitoring reports describe the discharges as follows:

    a. Waste 001 averages 4.76 million gallons per day (MGD) and consists of process wastes, cooling tower and boiler blowdown, ballast water, the initial stormwater runoff from the Light Oil Processing Area, and blowdown from a hazardous waste incinerator. The treated wastes are discharged into Carquinez Strait (Lat. 38 01' 56", Long. 122 07' 44") via a 24-inch outfall with diffuser ports at a depth of 20 feet under the Martinez Complex Wharf.

b. Waste 002 consists of stormwater runoff from an 152 acre area. This runoff comes from storage tank areas and the post-initial runoff from the Light Oil Processing Area. The combined runoff is discharged from two ponds in series (each with an oil baffle) into a drainage course at a point 1000 feet East-South east from the intersection of Shell Avenue and Waterfront Road, then into Carquinez Strait (Lat. 38 01' 21", Long. 122 06' 38").

c. Waste 003 consists of stormwater runoff from a 22 acre petroleum storage area. This runoff is discharged from a concrete box with an oil baffle into a drainage course at a point near the northeast corner of the Trumbull Asphalt Plant, then into Carquinez Strait. (Lat. 38 01' 18", Long. 122 06' 16").

d. Waste 004 consists of stormwater runoff from a 29 acre petroleum storage area. This runoff is discharged from two ponds in series (each with an oil baffle) into a drainage course at a point about 2000 feet south from the Mt. View Sanitary District treatment plant, then into Carquinez Strait. (Lat. 38 01' 54", Long. 122 06' 07").

e. Waste 005 consists of stormwater runoff from a 10 acre area containing an emergency flare. This runoff is discharged from a pond with an oil baffle into a drainage course at a point about 1500 feet south of the Mt. View Sanitary District treatment plant, then into Carquinez Strait. (at. Lat. 38 00' 58", Long. 122 06' 07").

f. Waste 007 consists of stormwater runoff from a 7 acre propane/butane storage area. This runoff is discharged from a pond (with an oil baffle) into a drainage course at a point about 3000 feet west of the Mt. View Sanitary District treatment plant, then into Carquinez Strait (Lat. 38 01' 05", Long. 122 06' 07").

5. The Board adopted a Revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986, and the State Water Resources Control Board approved it on May 21, 1987. The provisions of this permit are consistent with the revised Basin Plan.

6. Carquinez Strait is suspected to be water quality limited receiving water segment. The State Board Water Quality Assessment indicates that the Strait has elevated levels of mercury and selenium and has experienced fish declines.

7. It is the Board's intent to investigate and limit the point source discharges of selenium.

8. The beneficial uses of Carquinez Strait are:

   a. Water contact recreation

b. Non-contact water recreation
c. Navigation
d. Ocean commercial and sport fishing
e. Wildlife habitat
f. Estuarine habitat
g. Fish spawning and migration
h. Industrial process and service supply
i. Preservation of rare and endangered species.

9. The State Board, on May 16, 1974, adopted Resolution No. 74-43, which prescribed a Water Quality Control Policy for the Enclosed Bays and Estuaries of California. This policy states in part:

"Persistent or cumulative toxic substances shall be removed from the waste to the maximum extent practicable through source control or adequate treatment prior to discharge."

10 The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21110) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

11 Effluent limitation and toxic effluent standards established pursuant to Section 208 (b), 301, 304, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge.

12 Effluent limitation guidelines requiring the application of best available technology economically achievable (BAT) have been promulgated by the U.S. Environmental Protection Agency for the Lube Subcategory of the Petroleum Refining Point Source Category, 40 CFR Part 419, on October 18, 1982, and amended on July 12, 1985. Effluent limitations of this Order are based on these guidelines, the Basin Plan, other State plans and policies, current plant performance, and best professional judgement.

13 This Order contains effluent limits based on recent production rates at this facility. The Board is aware that production can vary and will expedite reissuance of a new permit pursuant of 40 CFR 122.62 and 124.5 upon receipt of an application with new production data.

14 The Board has notified the discharger and interested agencies and persons of its intent to reissue waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and opportunity to submit their written views and recommendations.

15 The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Federal Water Pollution Control Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. The discharge of Waste 001 containing constituents in excess of the following limits is prohibited:

| Constituent | Units | Monthly Average | Maximum Daily |
|---|---|---|---|
| BOD (5-day @ 20 C.) | lbs/day | 2,076. | 4,083. |
| | kg/day | 943.6 | 1,856. |
| TSS | lbs/day | 1,825. | 2,851. |
| | kg/day | 829.5 | 1,296. |
| COD | lbs/day | 15,054. | 28,967. |
| | kg/day | 6843. | 13,167. |
| Oil and grease | lbs/day | 684. | 1,300. |
| | kg/day | 311. | 591. |
| | mg/l | 8. | 15. |
| Phenolic Compounds | lbs/day | 8.51 | 30.3 |
| | kg/day | 3.87 | 13.8 |
| Ammonia as N | lbs/day | 867. | 1,893. |
| | kg/day | 394.1 | 860.5 |
| Sulfides | lbs/day | 12.1 | 26.9 |
| | kg/day | 5.5 | 12.2 |
| Total Chromium | lbs/day | 9.9 | 28.6 |
| | kg/day | 4.5 | 13.0 |
| Hexavalent Chromium | lbs/day | 0.82 | 1.82 |
| | kg/day | 0.37 | 0.83 |

| | | | |
|---|---|---|---|
| Settleable Solids | ml/l/hr | 0.1 | 0.2 |

2. In addition to the monthly average and daily maximum pollutant weight allowances shown in A.1., allocations for pollutants attributable to stormwater runoff and ballast water discharged as a part of Waste 001 are permitted in accordance with the following schedules:

STORMWATER RUNOFF

| Maximum Constituent | Units | Monthly Average | Daily |
|---|---|---|---|
| BOD (5-day @ 20) | mg/l | 26. | 48. |
| TSS | mg/l | 21. | 33. |
| COD | mg/l | 180. | 360. |
| Oil and grease | mg/l | 8. | 15. |
| Phenolic Compounds | mg/l | 0.17 | 0.35 |
| Total Chromium | mg/l | 0.43 | 0.73 |
| Hexavalent Chromium | mg/l | 0.028 | 0.062 |

Ballast Water

| Maximum Constituent | Units | Monthly Average | Daily |
|---|---|---|---|
| BOD (5-day @ 20) | mg/l | 26. | 48. |
| TSS | mg/l | 21. | 33. |
| COD | mg/l | 240. | 470. |

| | | | |
|---|---|---|---|
| Oil and grease | mg/l | 8. | 15. |
| pH | Between 6.0 to 9.0 | | |

The total effluent limitation for the discharge is the sum of the stormwater runoff allocation, the ballast water allocation and the mass limits contained in A.1. The total effluent limitation (both maximum and average) is to be computed at the discretion of the discharger on a monthly basis as shown in Part B of the Monitoring Program.

3. The discharge of Waste 001 containing constituents in excess of the following limits is prohibited:

| Constituent | Units | Daily Average |
|---|---|---|
| Arsenic | µg/l | 200 |
| Cadmium | µg/l | 30 |
| Chromium (VI) * | µg/l | 110 |
| Copper | µg/l | 200 |
| Cyanide | µg/l | 25 |
| Lead | µg/l | 56 |
| Mercury | µg/l | 1 |
| Nickel | µg/l | 71 |
| Silver | µg/l | 23 |
| Zinc | µg/l | 580 |
| Phenols | µg/l | 500 |
| PAH's | µg/l | 150** |

* Dischargers may at their option meet this limit as total chromium.
**Polyaromatic hydrocarbons as identified by EPA method 610. If the discharge exceeds the limit for PAH's, concentrations of individual constituents should be reported.

4. The pH of the discharge of waste 001 shall not exceed 9.0 nor be less than 6.0.

5. Waste 001 shall not have a chlorine residual exceeding 0.0 mg/l.

6. The survival of three-spine stickleback and rainbow trout (or fathead minnow) in parallel 96-hour flow through bioassays of Waste 001 shall not be less than 50% survival.

7. Total coliform bacteria for a median of 5 consecutive samples of Waste 001 shall not exceed 240 MPN/100 ml.or in the combined flow from those septic tanks.

8. The discharge of Wastes 002, 003,004,005, and 007 containing constituents in excess of the following limits is prohibited:

| Constituent | Units | Maximum Daily |
|---|---|---|
| Oil and Grease | mg/l | 15 |
| TOC | mg/l | 110 |
| pH | Standard units | 6.5 - 8.5 |
| Visible Oil | observation | None |
| Visible color | observation | None |

B. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the state at any place:

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths;

   c. Alteration of turbidity or apparent color beyond present natural background levels;

   d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

   e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

   a. Dissolved oxygen: 7.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation.

b. Dissolved sulfide: Shall not exceed natural background levels.

c. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.

d. Un-ionized Ammonia (as N): 0.025 mg/l Annual Median
0.16 mg/l Maximum at any time

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

C. Prohibitions

1. Waste 001 shall receive an initial dilution of at least 10:1.

2. The discharge of all conservative toxic and deleterious substances above those levels which can be achieved by a program acceptable to the Board, is prohibited. This Prohibition is to be implemented by Provision D.2., listed below.

D. Provisions

1. The discharger shall comply with the limitations, prohibitions, and other provisions of this order immediately upon its adoption by the Board.

2. The Discharger shall demonstrate compliance with Prohibition C.2. in accordance with the following time schedule:

A. The Discharger shall investigate thoroughly and then implement forthwith all reasonable treatment and source control measures to limit the discharge of the constituents copper, lead, mercury, nickel, vanadium and zinc to the maximum extent practicable. The Discharger shall report on the findings of this study and describe future plans for source reduction and treatment to the satisfaction of the Executive Officer by June 1, 1991.

In the development of control strategies, consideration must be given to either elimination of the source, and/or control to a level that would result in final effluent quality meeting the 1986 Basin Plan shallow water effluent limits (contained in Table 4-1). In the case of vanadium, consideration must be given to source control measures that would reduce the discharge to the extent practicable.

B. The Discharger shall investigate thoroughly and implement all reasonable treatment and source control measures to limit the discharge of selenium according to the following time schedule:

| Task | Deadline |
|---|---|
| Determine sources and develop a source control and treatment assessment program acceptable to the Executive Officer for selenium in Waste 001. This shall include a program to assess alternative treatment technologies which will determine the technical and economic feasibility of reducing the Waste 001 selenium effluent concentration to the concentrations of 1, 10, and 50 ppb. | September 1, 1990 |
| Begin implementing a control strategy study acceptable to the Board for selenium in Waste 001 that incorporates the findings from the previous task. | November 1, 1990 |
| Implement a control strategy acceptable to the Board that incorporates the results and findings of the previous task. | November 1, 1991 |

C. In order to characterize the quality of stormwater discharge, the Discharger shall analyze Wastes 002, 003, 004, 005 and 007 weekly for the constituents listed in Effluent Limitation A.3., and selenium, until May 1, 1991. In addition, the first discharges of these Wastes following the adoption of this permit are to be analyzed by EPA methods 624 and 625. The results will then be analyzed to determine the extent of future monitoring or treatment of these Wastes that will be required. The Discharger shall also determine the feasibility of providing flow measurement for these Wastes, to be provided in a report submitted to the Board by August 1, 1990.

Based on the results of Provisions D.2. A, B, and C, this permit shall be reopened and modified pursuant to 40 CFR 122.62 and 124.5 to incorporate the results of the source control and treatment program.

In the event that the Discharger's control strategies are not effective or that the Discharger's progress towards implementing those strategies is not effective, this permit shall be reopened and modified to include effluent limits pursuant to 40 CFR 122.62 and 124.5.

3. The Discharger shall study the potential for accumulation of metallic and organic compounds, and selenium, present in Waste 001 in San Francisco Bay organisms known or suspected to accumulate these compounds. These compounds should be analyzed in Waste 001 and in the tissue of test organisms exposed to Waste 001 to determine bioconcentration factors that can then be used to predict concentrations of these compounds in organisms that may be exposed to Waste 001 in the receiving water. This study may involve a combination of laboratory and in situ work. An implementation plan shall be submitted by December 1, 1990, and implementation shall commence no later than 30 days after approval of the plan by the Executive Officer.

4. The Discharger shall study the potential for accumulation of metallic and organic constituents, and selenium, present in Waste 001 in sediments adjacent to the Waste 001 deepwater outfall. An implementation plan shall be submitted by December 1, 1990 and implementation shall commence no later than 30 days after approval of the plan by the Executive Officer.

5. The discharger shall investigate the near-field and far-field impacts of the discharge of Waste 001. The investigation shall include water column, sediment, and bioaccumulation monitoring. An implementation plan shall be submitted by November 1, 1990 and implementation shall commence no later than 30 days after approval of the plan by the Executive Officer.

6. The discharger shall update their Best Management Practices Plan by submission of a listing of all biocides used within their facility. This disclosure shall be submitted no later than 30 days from the adoption of this permit.

7. This Order shall serve as a National Pollutant Discharge Elimination permit pursuant to Section 402 of the Federal Water Pollution Control Act, or amendments thereto, and shall take effect at the end of ten days from date of hearing, provided the Regional Administrator, U.S. Environmental Protection Agency Region 9, has no objections.

8. This permit shall be modified or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(c), and (d), 303, 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

(a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or,

(b) Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

9. The discharger shall comply with the attached Self-Monitoring Program as adopted by the Board, and as may be amended by the Board pursuant to EPA regulations 40 CFR 122.62, 122.63, 124.5.

10 Pursuant to EPA regulations 40 CFR 122.44, 122.62, and 124.5, this permit may be modified prior to the expiration date to include effluent limitations for toxic constituents determined to be present in significant amounts in the discharge through a more comprehensive monitoring program included as a part of this Order.

11 All applications, reports, or information submitted to the Regional Board shall be signed and certified pursuant to Environmental Protection Agency regulations (40 CFR 122.41K).

12 Pursuant to Environmental Protection Agency regulations [40 CFR122.42(a)] the discharger must notify the Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin, use or manufacture a toxic pollutant not reported in the permit application, or (2) a discharge of a toxic pollutant not limited by this permit has occurred, or will occur, in concentrations that exceed the specified limits in 40 CFR 122.42(a).

13 The discharger shall comply with all items of the attached "Standard Provisions and Reporting Requirements and Definitions," dated December, 1986.

14 This Order expires on May 16, 1995, and the discharger must file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.

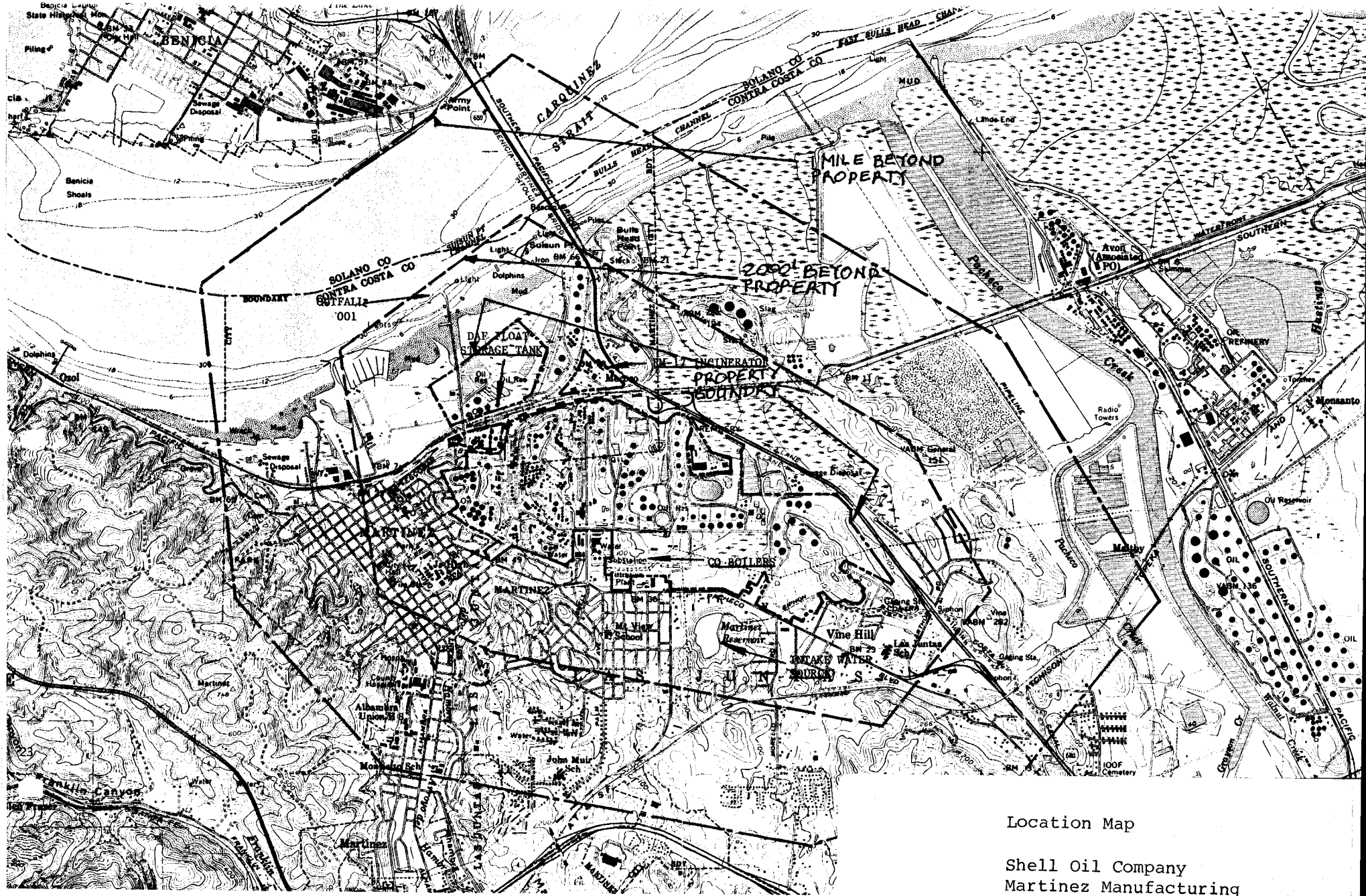
15 Order No. 85-22 is hereby rescinded.

I, Steven R. Ritchie, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on June 20, 1990.

STEVEN R. RITCHIE
Executive Officer

Attachments:

Location Map
Standard Provisions and Reporting Requirements and Definitions, dated December, 1986
Self-Monitoring Program




Location Map

Shell Oil Company
Martinez Manufacturing
Complex

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

# SELF-MONITORING PROGRAM

FOR

SHELL OIL COMPANY
MARTINEZ MANUFACTURING COMPLEX
CONTRA COSTA COUNTY

NPDES NO. CA0005789

ORDER NO. 90-095

CONSISTS OF

| | | |
|---|---|---|
| PART A | dated 12/86 | |
| PART B, | Adopted: | June 20, 1990 |
| | Revised: | February 1, 1993 |

SELF-MONITORING PROGRAM

PART B

DESCRIPTION OF SAMPLING STATIONS
AND
SCHEDULE OF SAMPLING, ANALYSIS & OBSERVATIONS

I. Sampling Station Location/Description

A. EFFLUENT

| Station | Description |
|---|---|
| E-001 | At any point in the outfall from the Waste 001 treatment facilities to the discharge point, at which all waste tributary to the outfall is present. |
| E-001D | At any point downstream from the disinfection facilities for the refinery sanitary sewage, at which all such sewage is present and adequate disinfection is assured. |
| E-002 | At the point of discharge from the rtention pond(s) for Waste 002. |
| E-003 | At the point of discharge from the retention pond(s) for Waste 003. |
| E-004 | At any point in the outfall from the treatment facilities for Waste 004. |
| E-005 | At any point in the outfall from the treatment facilities for Waste 005. |
| E-007 | At any point of discharge of Waste 007 to the drainage course about 3000 feet west of the Mt. View Sanitary District treatment plant. |

B. RECEIVING WATERS

| Station | Description |
|---|---|
| C-0 | Located over the center of the diffuser |
| C-1 | 75-feet west of the diffuser, at the center of the wharf. |
| C-2 | 75-feet east of the diffuser, at the center of the wharf. |
| C-R1 | At a point, in Carquinez Strait, located at the east end of the wharf. |
| C-R2 | At a point, in Carquinez Strait, located at the west end of the wharf. |

C. SEDIMENTS

| Station | Description |
|---|---|
| To be determined. | - |

II. Miscellaneous Reporting

A. The Discharger shall record the rainfall on each day of the month.

B. The Discharger shall determine the stormwater runoff/ballast water allocation (daily & monthly) for its discharge using the method described in attached Form A. Form A shall be submitted with the monthly self-monitoring report. The daily maximum allocation must be computed for each day Waste 001 is monitored.

C. The discharger shall retain and submit (where required) the following information concerning the monitoring program for organic and metallic pollutants:

1. Description of sample stations, times, and procedures

2. Description of sample containers, storage, and holding time prior to analysis.

3. Quality assurance procedures together with any test results for replicate samples, sample blanks, and any quality assurance tests, and the recovery percentages for the internal and surrogate standards.

D. The Discharger shall submit in the monthly self-monitoring report the metallic & organic test results together with the detection limits (including unidentified peaks). All unidentified (non-Priority Pollutants) peaks detected in the EPA 624 and 625 test methods shall be identified and semi-quantified. Hydrocarbons detected at < 10 ug/l based on the nearest internal standard may be appropriately grouped and identified together as aliphatic hydrocarbons, aromatic hydrocarbons, and unsaturated hydrocarbons. All other hydrocarbons detected at >10 ug/l based on the nearest internal standard shall be identified and semi-quantified.

E. Ballast Water treated and discharged as part of Waste 001 shall be metered and the volume recorded in attached Form A for each calendar day. The 30-day average shall be the sum of the daily values in a calendar month divided by the number of days in that month. Ballast water allocations shall be calculated by multiplying the volume of ballast water, determined above by the appropriate concentration listed under Effluent Limitation A.2. in the permit.

F. The Discharger shall submit a sketch showing the location of all ponds, treatment facilities of waste discharge. This shall be updated by the discharger as changes occur.

III. Schedule of Sampling and Analysis

A. The schedule of sampling and analysis shall be that given in Table 1 (attached).

B. Sample collection, storage, and analysis shall be performed according to the latest 40 CFR Part 136 or other methods approved and specified by the Board or the Executive Officer.

C. The discharger shall retain and submit (where required) the following information concerning the monitoring program for organic and metallic pollutants:

1. Description of sample stations, times, and procedures

2. Description of sample containers, storage, and holding time prior to analysis.

3. Quality assurance procedures together with any test results for replicate samples, sample blanks, and any quality assurance tests, and the recovery percentages for the internal and surrogate standards.

IV. MODIFICATIONS TO PART A

A. Exclude paragraphs D.3., F.3., F.5., and D.2.b.

B. Paragraph D.2.a. shall be modified as follows:

Composite samples of effluent shall be collected on random weekdays and on any day when
substantial changes in flow occur during dry weather conditons.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established by this Board.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions may be ordered by the Executive Officer or Regional Board, pursuant to 40CFR 122.62 and 124.4.

STEVEN R. RITCHIE
Executive Officer

Effective
Date 6/20/90

Attachments:
Table 1

TABLE 1

SCHEDULE OF SAMPLING, MEASUREMENTS, AND ANALYSIS

| Station | Constituent | Unit | Sample Type | Frequency of Analysis |
|---|---|---|---|---|
| E-001 | Flow | MGD | Continuous | Continuous |
| | BOD | mg/l<br>kg/day | Composite | Twice each month |
| | TSS | mg/l<br>kg/day | Composite | Weekly |
| | Settleable Matter | ml/l/hr | Grab | Monthly |
| | Oil & Grease | mg/l<br>kg/day | Grab[1,6] | Monthly |
| | Ammonia N | mg/l<br>kg/day | Composite | Weekly |
| | Total Sulfides | mg/l | Grab[6] | Monthly |
| | COD | mg/l<br>kg/day | Composite | Weekly |
| | Acute Fish Toxicity [12] | %Surv | Composite | Weekly |
| | Crit. Life Stage Tox. Test [14] | [14] | Composite | Monthly |
| | pH[2] | - | Continuous | Continuous |
| | Temperature | Celsius | Continuous | Continuous |
| | Aluminum | mg/l<br>kg/day | Composite | Monthly |
| | Arsenic [13] | " | " | " |
| | Cadmium | " | " | " |
| | Chromium | | | |
| | Total | " | " | " |
| | Hexavalent | " | " | " |
| | Cobalt | " | " | " |
| | Copper | " | " | " |
| | Silver | " | " | " |
| | Lead | " | " | " |
| | Mercury | " | " | " |
| | Nickel | " | " | " |
| | Vanadium | " | " | " |
| | Zinc | " | " | " |
| | Selenium [9] | mg/l<br>kg/day | Composite | Weekly |
| | Cyanide | " | " | " |
| | Phenols | " | " | " |
| | PAH's [7] | mg/l<br>kg/day | Composite | Monthly |
| | EPA 624 [4] | mg/l<br>kg/day | Grab [6] | Yearly |
| | EPA 625 [5] | " | " | " |

| Station | Constituent | Unit | Sample Type | Frequency of Analysis |
|---|---|---|---|---|
| E-001 | Standard Observations | - | -- | Daily |
| E-001D | Coliforms | MPN/ 100ml | Grab | Twice per week |
| E-002 to E-00x | Oil & Grease | mg/l | Grab | On each occurrence |
| | pH | - | " | " |
| | TOC | mg/l | " | " |
| | Standard Observations | - | -- | " |
| | Flow | gallons | Continuous | " |
| | Specific Conductance | $\mu$mhos/cm | Grab | " |
| | TSS | mg/l | " | " |
| C-0 | pH | - | Grab | Quarterly |
| | D.O. | mg/l | " | " |
| | Temperature | Celsius | " | " |
| | Sulfides [3] | mg/l | " | " |
| | Unionized Ammonia | mg/l | " | " |
| | TDS | mg/l | " | " |
| | Standard Observations | - | -- | " |

Footnotes for Table 1:

1. Oil and grease sampling shall consist of 3 grab samples taken at 2 hour intervals during the sampling day, with each being collected in a glass container. The entire volume of each sample shall be composited prior to analysis. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite wastewater sample for extraction and analysis.

2. Daily minimum and maximum for pH shall be reported.

3. Receiving water analysis for sulfides should be run when dissolved oxygen is less than 5.0 mg/l.

4. Volatile Organic Toxic Pollutants shall be analyzed using EPA 624 of the July 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057.

5. Acid and Base/Neutral Extractable Organic Toxic Pollutants shall be analyzed using EPA Method 625 of the July, 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057.

6. Grab Samples Shall be collected coincident with samples collected for the analysis of regulated parameters. In addition, the grab samples must be collected in glass containers.

7. Polynuclear aromatic hydrocarbons shall be analyzed using EPA Method 610 of the July, 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057. Note that the samples must be collected in amber glass containers. These samples shall be collected for the analysis of the regulated parameters. An automatic sampler which incorporates glass sample containers and keeps the samples refrigerated a 4°C and protected from light during compositing may be used. The 24-hour composite samples may consist of eight grab samples collected at 3-hour intervals. The analytical laboratory shall remove flow-proportioned volumes from each sample vial or container for the analysis.

8. When replicate analyses are made of a coliform sample, the reported result shall be the arithmetic mean of the replicate analysis values.

9. Selenium must be analyzed for only be the atomic absorption, gaseous hydride procedure (EPA method No. 270.3/ Standard Method No. 303E).

10. To be sampled at the first discharge following the adoption of this permit.

11. To be sampled weekly upon occurrence of the discharge, from the adoption of this permit until May 1, 1991.

12. Fathead minnows, and three-spine stickleback are to be tested pursuant to Effluent limitation A.6. Rainbow trout shall be also be tested on a weekly basis in a parallel, 96-hour flow through bioassay starting on November 16, 1990. The results of the trout testing are for monitoring purposes only unless otherwise specified by the Executive Officer.

13. Arsenic must be analyzed for only by the atomic absorption, gaseous hydride procedure (EPA Method 206.3/ Standard Method No. 303E).

14. Critical Life Stage Toxicity Test shall be performed in accordance with the Chronic Toxicity Monitoring Requirements of Order No. 92-101.